| **Table 2** Stoichiometric matrix of processes and components in ASM3-ON | | | | | | | | | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Process | *SO* | *SI* | *SS* | *SUAP* | *SBAP* | *SND* | *SNH* | *SN* | *SNO* | *SALK* | *XI* | *XS* | *XH* | *XSTO* | *XA* | | *XSS* | *XND* | |
| 1 Hydrolysis | 0 |  |  | 0 | 0 | 0 |  | 0 | 0 |  | 0 | 1 | 0 | 0 | 0 |  | | | 0 |
| 2 Aerobic storage on SS |  | 0 | 1 | 0 | 0 | 0 |  | 0 | 0 |  | 0 | 0 | 0 | *YSTO,O* | 0 | |  | | 0 |
| 2.1 Aerobic storage on UAP |  | 0 | 0 | 1 | 0 | 0 |  | 0 | 0 |  | 0 | 0 | 0 | *YSTO,O* | 0 | |  | | 0 |
| 2.2 Aerobic storage on BAP |  | 0 | 0 | 0 | 1 | 0 |  | 0 | 0 |  | 0 | 0 | 0 | *YSTO,O* | 0 | |  | | 0 |
| 3 Anoxic storage on SS | 0 | 0 | 1 | 0 | 0 | 0 |  |  |  |  | 0 | 0 | 0 | *YSTO,NO* | 0 | |  | | 0 |
| 3.1 Anoxic storage on UAP | 0 | 0 | 0 | 1 | 0 | 0 |  |  |  |  | 0 | 0 | 0 | *YSTO,NO* | 0 | |  | | 0 |
| 3.2 Anoxic storage on BAP | 0 | 0 | 0 | 0 | 1 | 0 |  |  |  |  | 0 | 0 | 0 | *YSTO,NO* | 0 | |  | | 0 |
| 4 Aerobic growth of XH |  | 0 | 0 |  | 0 | 0 |  | 0 | 0 |  | 0 | 0 | 1 | 1/*YH,O* | 0 | |  | | 0 |
| 5 Anoxic growth of XH | 0 | 0 | 0 |  | 0 | 0 |  |  |  |  | 0 | 0 | 1 | 1/*YH,NO* | 0 | |  | | 0 |
| 6 Aerobic endogenous respiration of XH |  | 0 | 0 | 0 |  | 0 |  | 0 | 0 |  | *f1* | 0 | –1 | 0 | 0 | |  | | 0 |
| 7 Anoxic endogenous respiration of XH | 0 | 0 | 0 | 0 |  | 0 |  |  |  | ] | *f1* | 0 | –1 | 0 | 0 | |  | | 0 |
| 8 Aerobic growth on XSTO | –1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | –1 | 0 | |  | | 0 |
| 9 Anoxic growth on XSTO | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  |  |  | 0 | 0 | 0 | –1 | 0 | |  | | 0 |
| 10 Aerobic growth of XA |  | 0 | 0 |  | 0 | 0 |  | 0 | 1/*YA* |  | 0 | 0 | 0 | 0 | 1 | |  | | 0 |
| 11 Aerobic endogenous respiration of XA |  | 0 | 0 | 0 |  | 0 |  | 0 | 0 |  | *f1* | 0 | 0 | 0 | 1 | |  | | 0 |
| 12 Anoxic endogenous respiration of XA | 0 | 0 | 0 | 0 |  | 0 |  |  |  |  | *f1* | 0 | 0 | 0 | 1 | |  | | 0 |
| 13 Ammonification of DON | 0 | 0 | 0 | 0 | 0 | –1 | 1 | 0 | 0 | 1/14 | 0 | 0 | 0 | 0 | 0 | | 1 | | 0 |
| 14 Hydrolysis of entrapped ON | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |  | | 1 |